

Notwithstanding sections 2(b) and 221(b), no State or local government shall have any authority to regulate the entry of or the rates charged by any commercial mobile service . . . except that this paragraph shall not prohibit a State from regulating the other terms and conditions of commercial mobile services.

Thus, the statute provides that states have no authority over rates charged by CMRS providers, nor can states regulate CMRS entry.

Congress' action to preempt entry regulation for mobile services represents a monumental shift in policy from Section 2(b) of the Act so that to take the most stringent possible view of Section 2(b), states no longer "retain jurisdiction over purely intrastate calls notwithstanding the economic effect such State jurisdiction might have on the interstate market."¹³⁸

Inherently, this prohibition against state action includes intrastate interconnection compensation charges negotiated between LECs and CMRS carriers. Contrary to the Bell Atlantic/PacTel ex parte assertions,¹³⁹ the rates charged by CMRS

¹³⁸ See Nat'l Ass'n of Regulatory Util. Comm'rs v. FCC, 746 F.2d 1492, 1500 (D.C. Cir. 1984) (Bork, J.).

¹³⁹ See Bell Atlantic/PacTel ex parte, supra, at 4. Apparently, Bell Atlantic and PacTel fail to understand the mutuality of rates involved in a LEC to CMRS interconnection compensation arrangement. This could perhaps be the product of the longstanding practice of the LEC industry to consistently charge cellular carriers for traffic termination, but provide no reciprocal payment for termination of their traffic on the CMRS network. See Economic Issues paper at 8. (In current marketplace, all cellular carriers surveyed must pay LECs to terminate CMRS traffic on the LEC network, while few receive in-
(continued...)

providers for completing LEC traffic are "rates charged by a CMRS provider." The mere fact that the rate charged would be \$0.00 under a reciprocal termination arrangement, does not strip a price term of its classification as a rate.¹⁴⁰

In addition, the fact that Commission regulation of the CMRS interconnection compensation rate unavoidably implicates the regulation of the LEC interconnection compensation rate does not bar preemption. The compensation rate mutually charged is one single transaction; it is literally impossible to permit separate state regulation of the LEC side of this mutual rate without triggering the Section 332(c)(3)(A) prohibition.

Finally, the fact the rate is charged to a co-carrier does not strip it of its status as a rate either. In fact, the 1993 amendments to Section 332 "remove the [section 2(b)] bar on Federal regulation of 'charges . . . in connection with intrastate communication service . . . by radio.'" ¹⁴¹

¹³⁹(...continued)
kind payments from LECs. In some cases, CMRS providers must pay LECs for LEC-originated traffic).

¹⁴⁰ Prof. Goldberg concurs in this analysis. See Goldberg Preemption Analysis, supra, at 9 ("§ 332(c)(3) . . . expressly removes state authority over entry and rates and has the federal government occupy the field").

¹⁴¹ See CTIA written Ex Parte presentation in CC Docket 95-185, at 2 (March 1, 1996) ("CTIA 3/1/96 ex parte").

Importantly, there is no inherent limitation on the preemption of rates charged by CMRS providers solely to customer end-users.¹⁴²

Moreover, the explicit and absolute prohibition against entry regulation comprehends state regulation of LEC interconnection rates as well. That is, any entry barriers, whether entirely or merely partially effective, whether direct or indirect, are prohibited. Therefore, states may not directly or indirectly impede entry, either entirely or partially (e.g., through added cost or delay) by their regulation of LEC to CMRS interconnection compensation rates.

Further, the notion that states do not have "any authority" under Section 332 over rates strongly suggests that states should not be permitted to indirectly affect LEC to CMRS interconnection rates through their lawful exercise of authority over the "terms and conditions."¹⁴³ The legislative history supports this analysis. Specifically, the House Report's discussion of "terms and conditions" refers, among other things, to consumer protection measures such as "customer billing information and

¹⁴² Goldberg Preemption Analysis, supra, at 5 ("[t]he words 'entry' and 'rates' are, of course, clear" i.e., should include carrier rates as well as end-user rates).

¹⁴³ As explicated in the House Report at 261, "other terms and conditions" is meant to include "matters generally understood to fall under 'terms and conditions.'" As Section 2(b) reserves to the states jurisdiction over intrastate telecommunications matters, including intrastate terms and conditions, any limitations on state and local jurisdiction arising under a traditional Section 2(b) analysis would equally apply with respect to state and local regulation of mobile services "other terms and conditions" under Section 332.

practices and billing disputes";¹⁴⁴ importantly, there is no mention of any terms or conditions that limit or modify the complete preemption of carriers' rates.

And viewed from a broader perspective, the legislative history of the 1993 legislation also supports this construction of Section 332. Both the House and Conference reports detail Congress' intention to create a national policy for wireless services designed to minimize intrusive federal and state regulation. Such a policy is predicated, in part, upon regulatory parity and uniformity notions, i.e., neither federal nor state nor local governments, by their regulatory efforts, are entitled to adopt regulations which introduce disparity among similar services. It also is predicated upon Congress' desire to promote competition, new technologies and the rapid buildout of a national wireless communications infrastructure.

In revising Section 332, Congress sought to ensure regulatory parity among CMRS providers because "the disparities in the current regulatory scheme [e.g., private mobile carriers are exempted from state and federal regulation of rates and entry while common carrier mobile services are not] could impede the continued growth and development of commercial mobile services."¹⁴⁵ In addition, it intended that all CMRS providers

¹⁴⁴ Id. at 261.

¹⁴⁵ See House Report at 260. See also Conference Report at 494 ("in considering the scope, duration or limitation of any (continued...)")

be subject to "[u]niform rules . . . to ensure that all carriers providing such services are treated as common carriers" under Title II of the Act.¹⁴⁶ By permitting regulatory forbearance of Title II provisions, Congress intended "to establish a Federal regulatory framework to govern the offering of all commercial mobile services."¹⁴⁷

Congress also specifically found it necessary to "preempt state rate and entry regulation" of CMRS providers to "foster the growth and development of mobile services that, by their nature, operate without regard to state lines as an integral part of the national telecommunications infrastructure."¹⁴⁸

¹⁴⁵ (...continued)

State regulation [the Commission] shall ensure that such regulation is consistent with the overall intent of this subsection as implemented by the Commission, so that, consistent with the public interest, similar services are accorded similar regulatory treatment.") (emphasis added).

¹⁴⁶ House Report at 259.

¹⁴⁷ See Conference Report at 490. See also 139 Cong. Rec. S7996-S7997 (daily ed. June 24, 1993). Congress incorporated by reference the findings of both the House bill and the Senate version. Section 402(13) of the Senate version finds that "because commercial mobile services require a Federal license and the Federal Government is attempting to promote competition for such services, and because providers of such services do not exercise market power vis-a-vis telephone exchange service carriers and State regulation can be a barrier to the development of competition in this market, uniform national policy is necessary and in the public interest." (emphasis added).

¹⁴⁸ House Report at 260. Moreover, while § 332 permits states to petition under certain circumstances to re-regulate CMRS provider rates, Congress intended that the Commission, when considering such petitions, should "give the policies embodie[d] in Section 332(c) an adequate opportunity to yield the benefits of increased competition and subscriber choice." Id. at 261.

As these statements show beyond dispute, Congress intended that the mobile services marketplace function efficiently, competitively, progressively, and with a minimum of regulatory intervention. Regulatory intervention, whether federal or state, is not tolerated if it introduces disparate treatment of similar services. By amending Section 332, Congress ensured that neither local nor federal government could harm CMRS competition or impair the continued build out of our nation's wireless communications infrastructure. State and local governments may not lawfully bar entry, create regulatory disparities or introduce significant inefficiencies in the production of CMRS through their regulation of LEC to CMRS interconnection compensation rates.

C. The Commission Also Has Authority Under Section 2(b) to Adopt a Comprehensive Reciprocal Termination Arrangement to Ensure the Efficient, Competitive Buildout of Nationwide Wireless Communications Infrastructure.

The "impossibility" analysis under Section 2(b) provides an alternative basis for Commission preemption. Under this rationale, the Commission is justified in preempting inconsistent interconnection compensation rates to ensure the efficient, competitive buildout of the nationwide wireless communications infrastructure. The MTA/BTA service area structure governing PCS licenses, geographic boundaries which do not respect state lines, expressly recognizes and accounts for the inherently interstate nature of mobile services. For this, reason, preemption of state

regulation would be warranted under a Section 2(b) analysis as well.

In Louisiana Pub. Serv. Comm'n v FCC,¹⁴⁹ the Supreme Court recognized an "inseverability" exception to the limitation of the Commission's preemption authority set forth in Section 2(b)(1) of the Communications Act.¹⁵⁰ In Louisiana, the Court found that the FCC may preempt state regulation where it is "not possible to separate the interstate and intrastate components of the asserted FCC regulation."¹⁵¹ The Court accordingly cited with approval previous cases which relied upon the inseverability of interstate and intrastate policy components in concluding that preemption was warranted.¹⁵²

The cases interpreting the Commission's preemption powers, both those surviving and interpreting Louisiana, can be understood to recognize both economic and physical inseverability. Economic inseverability occurs where a

¹⁴⁹ 476 U.S. 355 (1986).

¹⁵⁰ See 47 U.S.C. § 152(b) ("[N]othing in this Act shall be construed to apply or to give the Commission jurisdiction with respect to (1) charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier . . .").

¹⁵¹ Louisiana, 476 U.S. at 375 n.4.

¹⁵² See id. (citing North Carolina Util. Comm'n v. FCC, 537 F.2d 787 (4th Cir. 1976), cert. denied, 429 U.S. 1027 (1976); North Carolina Util. Comm'n v. FCC, 552 F.2d 1036 (4th Cir. 1976), cert. denied, 434 U.S. 874 (1977) (inseparability doctrine gives FCC authority to allow subscribers to provide their own telephones and to preempt state regulations prohibiting connection of such phones)).

Commission's economic policy could be rendered nugatory by inconsistent state regulations.¹⁵³ Physical inseverability occurs where enforcement of an inconsistent state regulation would be either physically impossible or require impractical alterations to the physical network.¹⁵⁴

State LEC-CMRS interconnection regulations that are incompatible with reciprocal termination would create physical inseverability. First, the policy supporting the Commission's reciprocal termination proposal is the promotion of an efficient, competitive buildout of a nationwide wireless communications

¹⁵³ See California v. FCC, 39 F.3d 919 (9th Cir. 1994) (On review of remand, FCC's limited preemption of state structural separation requirements for jurisdictionally-mixed enhanced services, and of CPNI and network disclosure rules upheld); Illinois Bell Tel. v. FCC, 883 F.2d 104 (D.C. Cir. 1989) (FCC preemption of state Centrex marketing regulations, including structural separation requirements, upheld because interstate and intrastate components of the regulation could not be separated).

¹⁵⁴ North Carolina Util. Comm'n v. FCC, 552 F.2d 1036 (4th Cir. 1976), for example, concerned a North Carolina regulation which prohibited customer provided CPE unless used exclusively for interstate calls. In order for this regulation to coexist with federal regulations permitting customers to provide their own CPE, users would need access to separate lines for interstate and intrastate service, an impractical alteration to the network. See also California v. FCC, No. 94-70197 (9th Cir. filed January 31, 1996) (upholding FCC preemption of technically incompatible state regulations for preventing disclosure of unpublished numbers when Caller ID goes into effect); National Ass'n of Regulatory Util. Comm'rs v. FCC, 880 F.2d 422 (D.C. Cir. 1989) (recognizing similar problem with regard to state regulations in conflict with federal policy of unbundling of inside wiring, although remanding to FCC for more narrow FCC ruling).

network.¹⁵⁵ The continuing development of cellular service has demonstrated that efficient buildout of wireless networks requires "clustering" of systems into regional areas. Indeed, recognizing the benefits of larger, interstate service areas, the Commission adopted an MTA/BTA scheme for licensing PCS. These larger CMRS service areas (both cellular and PCS) effectively dictate the most efficient system architecture, including the optimal number and location of LEC to CMRS interconnections. However, where states mandate differing interconnection compensation arrangements, a single efficient system configuration is no longer possible. Thus, it will be impossible to achieve Congress' and the Commission's goal of creating efficient interstate services if CMRS systems must be designed to accommodate varying requirements resulting from each state's differing approach to interconnection.¹⁵⁶

¹⁵⁵ See Notice at ¶ 111 ("preemption under Louisiana PSC may well be warranted here on the basis of inseverability, particularly in light of the strong federal policy underlying Section 332 favoring a nationwide wireless network") (citation omitted).

¹⁵⁶ See, CTIA 3/1/96 ex parte at 2-3 ("State regulation of LEC-to-CMRS interconnection rates is fundamentally inconsistent with the statutory goals of a nationwide CMRS market where the rapid deployment of wireless technology is encouraged. This is especially true in the case of PCS, which will operate in geographic areas that cross numerous state boundaries. Even if it were possible to segregate interstate and intrastate traffic, requiring a PCS provider to comply with several state compensation arrangements for a single set of facilities is directly contrary to the purposes of the section 332. Cellular networks likewise have evolved to a point where 'local' systems are now served by centralized signalling hubs that support multi-
(continued...)

Second, state traffic termination regulations would create a physical inseverability at least as severe as the economic inseverability. The simple fact is that wireless billing procedures are not designed to track state borders.¹⁵⁷ As the Commission pointed out in the Notice, for example, a wireless subscriber from Washington, D.C. may travel to Maryland and make a call to his home. Although the call is clearly an interstate call, it appears to the wireless network to be a call from one local telephone number to another. A further example of the problem arises where a Washington, D.C. wireless subscriber originates a call within the District and then crosses a state border during the call. Again, the call has clearly become an interstate call, but the wireless network is not able to recognize the fact, let alone make an appropriate jurisdictional allocation.

¹⁵⁶(...continued)
state regions. With CMRS providers increasingly utilizing such regional architecture, compliance with multiple, inconsistent rate structures for interconnection would be unnecessarily complex and burdensome." (citations omitted).

¹⁵⁷ Indeed, in virtually every respect, wireless networks operate without reference to state borders. As explained above, in preempting state rate and entry regulation of CMRS, Congress specifically recognized and accounted for the fact that "mobile services . . . by their nature, operate without regard to state lines." House Report at 260. Moreover, the Commission's adoption of PCS service areas based upon MTAs and BTAs -- geographic areas which follow patterns of trade rather than state lines -- demonstrates an express recognition of the interstate character of mobile services.

Thus, in order to implement a separate state regime, wireless carriers would be required to make costly and impractical additions to the network to determine the jurisdictional nature of each call. This is all the more so in the instant situation since, as discussed above, Section 332 of the Act essentially eliminates state jurisdiction over CMRS rates. Alterations to the network to accommodate dual jurisdictional schemes for traffic termination would therefore have no other use except to enforce the discrete state traffic termination policy.

State regulations inconsistent with a federal reciprocal termination requirement for LEC-CMRS traffic termination therefore fall squarely within both the economic and physical inseverability exceptions to the Section 2(b) jurisdictional grant. There is accordingly ample basis under the Section 2(b) jurisprudence for federal preemption of state traffic termination policies that conflict with reciprocal termination.

V. THE COMMISSION SHOULD DEFER CONSIDERATION OF CMRS PROVIDER ELIGIBILITY TO RECEIVE ACCESS CHARGE PAYMENTS TO THE ACCESS CHARGE REFORM PROCEEDING.

In response to the Notice's request for comment regarding whether CMRS carriers should receive payments for access,¹⁵⁸ CTIA believes that this issue is best considered in the context of comprehensive access charge reform.

There is no question that the Commission needs to comprehensively overhaul access charges and universal service principles, including their relationship to CMRS providers. Rather, CTIA requests the Commission to defer consideration of such issues at this time in the effort quickly to adopt reciprocal termination. There is no inherent need for the Commission to resolve all issues regarding access prior to adoption of reciprocal termination.

In fact, the tenets of Section 332 provide a jurisdictional basis for the Commission to consider CMRS interconnection compensation separately from the whole concept of access charge reform. As the Notice acknowledges,¹⁵⁹ the express prohibitions

¹⁵⁸ Notice at ¶¶ 115-117.

¹⁵⁹ Notice at ¶ 17 ("We believe that, as a matter of long-term policy, there may be important reasons why the regulatory regime for interstate access charges should not vary dramatically from the rules relating to LEC-CMRS interconnection, to the extent that LEC-CMRS and LEC-IXC interconnections use similar features and functions. We also acknowledge, however, that there may be significant reasons, including our interest in facilitating the competitive development of CMRS and considerations relating to Part 36 jurisdictional separations rules, that may necessitate differences in regulatory regimes.")

against state regulation of CMRS rates and entry justifies the Commission's separate consideration of these arguably related issues.

VI. CONSISTENT WITH THE PRINCIPLES OF REGULATORY PARITY, THE COMMISSION SHOULD REQUIRE RECIPROCAL TERMINATION TO GOVERN INTERCONNECTION ARRANGEMENTS AMONG ALL CMRS PROVIDERS VIS-A-VIS THE LECS.

The Notice requests comment upon whether its proposal for reciprocal termination should govern all LEC-CMRS relationships, or select CMRS carriers, including broadband PCS only, or broadband CMRS (i.e., voice) services only.¹⁶⁰ In its discussion documenting the advantages of an all-inclusive CMRS approach, the Commission recognizes that such action: (1) appears consistent with Congress' directive to maintain regulatory parity among CMRS services and; (2) should generate the greatest benefits to both the local exchange and the CMRS market.¹⁶¹ For these reasons, CTIA supports application of reciprocal termination to all LEC to CMRS compensation arrangements. By adopting an all-inclusive approach, the Commission will foster competition within both the CMRS market and more generally in the local exchange.¹⁶²

¹⁶⁰ Notice at ¶ 118.

¹⁶¹ Id. at ¶ 121.

¹⁶² Contrary to the Commission's intimation, see, e.g., Notice at ¶ 121, reciprocal termination as applied to all CMRS carriers is beneficial, even if applied to CMRS carriers that do not, and likely will not, compete with LEC services. In revising Section 332, Congress directed the Commission to foster the development of CMRS services. This directive included, but was not limited to, CMRS development as a competitor to the local exchange. The fact reciprocal termination promotes dynamic efficiencies in the CMRS-only market is entirely consistent with the tenets of Section 332 and should be fully pursued by the Commission.

In revising Section 332 in 1993, Congress charged the Commission to remove and to refrain from adopting regulations which subject similar services to disparate treatment. Permitting all CMRS providers access to the dynamic efficiencies associated with reciprocal termination is consistent with the regulatory parity requirements of Section 332.¹⁶³

Because of the evolutionary nature of CMRS, restricting reciprocal termination to some CMRS services could effectively deter their development. In a market where rapid technological change and market development and growth -- occurring on an almost daily basis -- are the rule, disparate regulation bears the greatest potential for harm to competitive outcomes. Consistent with Congress' intention that the progressive policies underlying Section 332 be given a sufficient opportunity to achieve fruition, it appears better at the outset to err on the side of over-inclusion. To the extent that the Commission's policies require re-examination, the scope and application of reciprocal termination can be included in the review process.

Moreover, given the flexibility of use currently afforded to all CMRS spectrum, and considering the Commission's recent

¹⁶³ 47 U.S.C. § 332. Congress specifically amended Section 332 in 1993 to ensure that "services that provide equivalent mobile services are regulated in the same manner." House Report at 259. For this reason, Congress established "uniform rules" to govern CMRS offerings and directed the Commission "to review its rules and regulations to achieve regulatory parity among services that are substantially similar." Id.

proposal to further relax current fixed-use restrictions,¹⁶⁴ this further counsels the adoption of reciprocal termination to govern all CMRS-LEC interconnection compensation relationships.

CTIA supports Commission adoption of policies which permit liberal, flexible use of spectrum, circumscribed only by the legal limits of the Commission's authority.¹⁶⁵ Just as the Flexible Use Notice reflects the Commission's recognition that the market is fully capable of ensuring that CMRS spectrum is put to the best, most efficient use,¹⁶⁶ the Commission should recognize as well in this case that reciprocal termination should

¹⁶⁴ The Flexible Use Notice proposes that CMRS providers be permitted to provide fixed wireless local loop services, and requests comment on whether other fixed services should be permitted as well. Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, Notice of Proposed Rulemaking in WT Docket 96-6, FCC 96-17, at ¶¶ 13, 16, 22 (released January 25, 1996).

¹⁶⁵ See Comments of the Cellular Telecommunications Industry Association in Gen Docket 90-314, ET Docket 92-100, at 6-20 (November 9, 1992) (catalogs instances in which Commission has permitted flexible use of spectrum, in part, in recognition of the competitive benefits associated with such flexibility) ("CTIA PCS Comments"); see also Stanley M. Besen, Robert J. Larner and Jane Murdoch, Charles River Associates, "An Economic Analysis of Entry by Cellular Operators into Personal Communications Services," a study prepared for CTIA and submitted with CTIA's PCS Comments (November 1992), at 25-28 ("the holder of a spectrum assignment should not be 'restricted in the use to which his [allocation] may be put'" (citation to A.S. De Vany, R.D. Eckert, S. Enke, D.J. O'Hara, and R.C. Scott, Electromagnetic Spectrum Management, TEMPO, General Electric Company, Santa Barbara, CA, August 1968, p 37.)

¹⁶⁶ This proposed flexibility of use is also entirely consistent with the tenets of Section 332, which favor market-place based solutions over government fiat. See Flexible Use Notice at ¶ 14.

be extended to all CMRS providers. In essence, by adopting reciprocal termination, the Commission acknowledges that such action will promote dynamic efficiencies, i.e., permit CMRS to evolve to its best and highest use free of artificial and uneconomic barriers. By contrast, restricting the applicability of reciprocal termination to a limited class of CMRS providers will also affect business (and investment) decisions, arguably in a detrimental manner.

VII. CONCLUSION

For these reasons, CTIA respectfully requests that the Commission expeditiously adopt a comprehensive reciprocal termination plan to govern interconnection compensation between LECs and all CMRS providers.

Respectfully submitted,

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OFFICE OF SECRETARY

**ECONOMIC ISSUES IN THE CHOICE OF COMPENSATION
ARRANGEMENTS FOR INTERCONNECTION BETWEEN LOCAL EXCHANGE
CARRIERS AND COMMERCIAL MOBILE RADIO SERVICE PROVIDERS**

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I. Introduction

As the Commission long has been aware, arrangements for interconnection between communications networks make a critical difference in the level of service new carriers can offer to consumers. This is true regardless of whether new carriers offer service that extends and complements the services of established carriers, or offer a substitute for service by established carriers. Where new carriers offer a substitute, technical and compensation arrangements for interconnection between new and established carriers that do not disadvantage new carriers also are critical for the development of competition and for realizing the benefits of competition.

The recent *Notice of Proposed Rulemaking* in CC Dockets Nos. 95-185 and 94-54 (the “*Notice*”) ¹ addresses interconnection arrangements between local exchange carriers (LECs) and commercial mobile radio service (“CMRS”) providers. As the Commission notes, these arrangements assume increased importance in light of the prospect of competition between CMRS providers and LEC wireline services.² The *Notice* first questions whether private negotiations without regulatory oversight of terms and conditions are likely to yield interconnection agreements in the public interest.³ It then explores various types of compensation arrangements, including several payment structures as well as bill and keep arrangements.

This paper identifies and analyzes economic issues that bear on the choice among compensation arrangements for interconnection. The next section discusses negotiated agreements and analyzes the threshold issue of whether regulatory oversight is desirable. This section discusses the economic forces that can be expected to influence the result of negotiated settlements, and the economic effects of the likely agreed-upon arrangements. If these agreements are instead to be subject to regulatory oversight of some sort, policy choices must be made among compensation arrangements. The remaining sections of this paper frame and analyze economic issues that bear on this choice. Section III

¹ Released January 11, 1996.

² See *Notice* at ¶2.

³ *Notice* at ¶¶8-14.

analyzes the cost recovery characteristics of bill and keep and usage sensitive payment arrangements. Section IV identifies three ways in which the choice of compensation arrangements may affect economic efficiency; these are analyzed in the following three sections. Section V analyzes the efficiency of price signals resulting from usage sensitive pricing and bill and keep arrangements. Section VI discusses the effects of compensation arrangements on transactions costs. Section VII discusses how the choice of compensation arrangements can affect competition and dynamic efficiency. Section VIII concludes.

The analysis reaches the following primary conclusions:

- Because of the unequal bargaining positions of CMRS providers and LECs, and because of the incentive of the LECs to use the pricing of interconnection service to extend or protect their market position, negotiations between LECs and CMRS providers that are unconstrained by regulatory rules or controls are unlikely to yield efficient interconnection compensation arrangements that are in consumers' interests.
- Carriers do not receive interconnection services for free under bill and keep arrangements. Each carrier incurs a cost obligation in exchange for the interconnection services it receives from the other carrier, because each receives termination services only in exchange for providing termination services for the other carrier.
- Whether, under bill and keep, carriers bear costs equal to the cost of interconnection services provided to them depends not on whether total traffic flows between interconnected carriers are equal, but on (a) the amount of traffic each carrier receives for termination during its system busy hour, and (b) the capacity cost per minute that each carrier incurs to terminate that busy hour traffic.
- A choice among compensation arrangements should consider not only the efficiency of price signals under each arrangement but also the effects of compensation arrangements on the costs of monitoring, billing, and collecting payments for services provided, and on the development of competition and dynamic efficiency.
- A choice between bill and keep and usage sensitive pricing should not be based on the simple argument that because the costs of interconnection are

usage sensitive, usage sensitive prices are therefore efficient and bill and keep is inefficient. This argument ignores the effects of compensation arrangements on costs and dynamic efficiency, and is an incomplete analysis of the efficiency of pricing signals under both bill and keep and usage sensitive pricing arrangements.

- Costs of dedicated circuits connecting CMRS and LEC networks should not be recovered with usage sensitive prices, but by capacity-based charges or other arrangements for sharing the costs of that capacity.
- The costs of shared network facilities used to terminate interconnected traffic are fundamentally costs of increasing capacity, and only additional terminating traffic that requires increases in capacity imposes a cost.
- Neither a bill and keep nor a usage sensitive pricing arrangement sends fully optimal price signals. Because the prices that in theory would be fully optimal will not be feasible in practice, it will be necessary to choose among arrangements with less than fully optimal price signals.
- Bill and keep arrangements set a price of zero for sending additional traffic for termination. A price of zero is optimal for the substantial volume of interconnected traffic that imposes no capacity costs, but is too low for traffic during the busy hour, or more generally for traffic that does impose capacity costs on the terminating carrier.
- A uniform price per minute, even if set no higher than the average cost per minute of terminating traffic, will be too high to send efficient pricing signals for traffic that does not impose capacity costs, and too low to send efficient pricing signals for most or all traffic that does impose capacity costs.
- Peak/off-peak pricing also will not send fully efficient price signals since, for one portion of the peak period, prices likely will be too high to send efficient pricing signals, and for all or most of the balance of the peak period prices will be too low to send efficient pricing signals.
- Without detailed demand and cost information, it is not possible to conclude that price signals will be more efficient with either a uniform price or a peak/off-peak price structure than with a bill and keep arrangement.
- Usage sensitive compensation arrangements will impose higher transactions costs to track and bill usage than will bill and keep arrangements.

- High prices for interconnection will increase the cost of serving a subscriber far more for CMRS providers than for LECs, and therefore excessive prices will sharply limit the ability of CMRS providers to provide competition for LEC service.
- The risk of hindering competition and reducing dynamic efficiency is greater with usage sensitive compensation arrangements than with bill and keep arrangements, because the risk of setting excessive prices for interconnection service is greater with usage sensitive compensation arrangements.

II. Negotiated Agreements

All carriers have incentives to minimize the costs of interconnection agreements. Carriers that neither have nor can expect to gain market power are likely to negotiate interconnection agreements that minimize both the costs of the interconnection arrangements themselves and the transactions costs associated with their agreement. By reducing costs of carrying interconnected traffic, and of measuring and billing for such traffic, firms gain the advantage of lower total costs than they would have with a less efficient interconnection agreement. Furthermore, the individual carriers will be well placed to reach efficient contracts because they will have good information about the relative costs of different technical and billing arrangements.

The tendency for privately negotiated contracts to have efficient properties depends crucially, however, on the two carriers having similar bargaining power, and on neither carrier being able to use the transaction to maintain or increase its market power. Neither condition is likely to hold when LECs and CMRS providers negotiate interconnection arrangements. A LEC typically has a much stronger bargaining position than a CMRS provider and possesses the ability to maintain or extend its market power through the terms of the agreement.

To offer its customers the ability to call and be called by LEC subscribers, a CMRS provider must acquire an essential input from the LEC: interconnection services. Of course, the LEC also needs interconnection service from the CMRS provider in order to allow its customers to place calls to or receive calls from CMRS subscribers. Thus, interconnection is valuable to both LECs and CMRS providers, but that does not mean it

is equally valuable. A simple numerical example illustrates some of the basic asymmetries between the two types of providers.

For this example, assume there is a total of 100 subscribers, with 90 subscribers to LEC service and 10 subscribers to CMRS service. Further, assume that each subscriber is equally likely to call each other LEC or CMRS subscriber in any given period of time.⁴ If each subscriber calls every other subscriber exactly once each month it is easy to calculate the amount of calling that is made possible by interconnection.

The calculations are summarized in Table 1. Each subscriber places and receives a total of 99 calls. However, there is a striking difference in the number of interconnected calls made and received by a LEC subscriber and by a CMRS subscriber. A CMRS subscriber makes 90 calls to LEC numbers and only 9 to CMRS numbers, and also receives 90 calls from LEC subscribers and 9 from CMRS subscribers. Just over 90 percent of calls for a CMRS subscriber depend on interconnection. This pattern is reversed for a LEC subscriber, with only about 10 percent of calling depending on interconnection: Just 10 of the 99 calls placed and 10 of the 99 received are to or from CMRS subscribers, while there are 89 calls to other LEC subscribers and 89 calls from other LEC subscribers.⁵

⁴ In this example, there is no asymmetry or imbalance in calling that is due, for example, to CMRS subscribers not wanting to call other CMRS numbers but only LEC numbers, or to LEC subscribers being uninterested in calling CMRS subscribers or being unable to complete calls to CMRS subscribers.

⁵ Note, however, each network terminates exactly the same volume of interconnected calls so that the traffic flows are balanced. Each of 10 CMRS subscribers places 90 calls to LEC numbers, a total of 900 calls, while each of 90 LEC subscribers places 10 calls to CMRS numbers, again a total of 900 calls.